CLAIM AMENDMENTS:

1. (Currently amended) Method of producing a self-hardening bioabsorbable composite material, wherein

(i) a polymerisation initiator is immobilised with the aid of a first partial amount of an interconnectingly porous bioabsorbable inorganic bone regeneration material,

(ii) a polymerisation activator is immobilised with the aid of a second partial amount of the bone regeneration material according to (i) or of a different interconnectingly porous bioabsorbable inorganic bone regeneration material,

(iii) the components obtained in steps (i) and (ii) are mixed with a liquid or paste-form multi-functional monomer capable of polymerisation to form a biocompatible and bioabsorbable polymer or with a liquid or paste-form mixture of multi-functional monomers capable of polymerisation to form a biocompatible and bioabsorbable polymer, wherein at least one of the constituents mixed in is a water-soluble pore-forming substance which is added to the monomer, monomer mixture and/or the mixture thereof with the bone regeneration material in particulate form, and

(iv) the monomer or monomer mixture contained in the mixture produced is polymerised and the composite material is obtained;

wherein

calcium phosphate having a pore volume, accessible to the polymerisation initiator and/or the polymerisation activator, of 0.4 cm^3/g or more, while retaining the integrity of the particles of the bone regeneration material and having the following characteristic data is used as the interconnectingly porous bioabsorbable inorganic bone regeneration material:

- pore diameters from 0.1 to 500 µm; and/or
- particle sizes (d_{50} values) of from 1 to 500 µm; and/or
- BET surface area of at least 0.1 m^2/g.

2. (Currently amended) Method according to claim 1, wherein~~, especially~~ in step (iii)[[,]] one or more constituents which modify the properties of the monomer, monomer mixture and/or composite material are mixed in, which modifying constituents are selected from the group consisting of thickeners, diluents, polymeric fillers, porogens, pH-modifying substances, colourants, adhesion-imparting agents, and silicon compounds.

Claim 3 (Cancelled)

4. (Currently amended) Method according to claim 1, ~~characterised in that~~ wherein at least one of the constituents mixed in is a substance which alters the viscosity of the monomer, the monomer mixture and/or the mixture thereof with the bone regeneration material.

5. (Currently amended) Method according to claim 4, ~~characterised in that~~ wherein the substances altering the viscosity of the monomer, the monomer mixture and/or the mixture thereof with the bone regeneration material are oligomeric or polymeric derivatives of alpha-hydroxycarboxylic acids~~, preferably those of lactic and/or glycolic acid,~~ and/or are substances from the group of oligo- and poly-ethylene glycols.

6. (Currently amended) Method according to claim 4, ~~characterised in that~~ wherein dianhydro-D-glucitol-bis(poly-D,L-lactide) is used as viscosity-increasing substance.

7. (Currently amended) Method according to claim 1, ~~characterised in that~~ wherein at least one of the constituents mixed in is a substance which is water-soluble or which reacts with

water to form water-soluble resultant products and which brings about a pH change in a water-containing medium.

Claim 8 (Cancelled)

9. (Currently amended) Method according to claim 7, ~~characterised in that~~ wherein sodium hydrogen carbonate is used as water-soluble pH-modifying and pore-forming substance.

10. (Currently amended) Method according to claim 1, ~~characterised in that~~ wherein at least one of the constituents mixed in is a substance which acts as an adhesion-imparting agent between the composite material and living ~~tissue, preferably~~ hard tissue.

11. (Currently amended) Method according to claim 10, ~~characterised in that~~ wherein hydroxyl-group-containing adhesion-imparting agents~~, preferably methacrylic acid 2-hydroxyethyl ester,~~ are used as adhesion-imparting agent.

12. (Currently amended) Method according to claim 1, ~~characterised in that~~ wherein at least one of the constituents mixed in is a colourant or a contrast agent.

13. (Currently amended) Method according to claim 1, ~~characterised in that~~ wherein at least one of the constituents mixed in is a pharmaceutical active ingredient or an active ingredient mixture ~~for local therapy and/or prophylaxis~~.

14. (Currently amended) Method according to claim 13, ~~characterised in that~~ wherein antibiotics, anti-inflammatories, proteinogenic growth factors and/or cancerostatics are used as pharmaceutical active ingredients.

15. (Previously presented) Method according to claim 1, wherein the first partial amount and the second partial amount of the bone regeneration material are used in a ratio of from 1:10 to 10:1 and/or the polymerisation initiator and the polymerisation activator are immobilised with the respective partial amounts of the bone regeneration material in a ratio of from 1:10 to 10:1 (based on weight in each case).

16. (Previously presented) Method according to claim 1, wherein the bone regeneration material is used in the form of powder or granules.

17. (Currently amended) Method according to claim 1, wherein[[,]] in step (i) a solution of the polymerisation initiator is added to the bone regeneration material, the solution is allowed to infiltrate the bone regeneration material, and afterwards the bone regeneration material is dried.

18. (Previously presented) Method according to claim 1, wherein a solution of the polymerisation initiator is mixed with the bone regeneration material in an amount of from 0.1 to 20 % by weight (solid initiator based on bone regeneration material).

19. (Currently amended) Method according to claim 1, wherein an organic peroxide is used as polymerisation initiator~~, preferably an organic peroxide selected from the group comprising dibenzoyl peroxide, lauroyl peroxide and acetone peroxide~~.

20. (Currently amended) Method according to claim 1, wherein, in step (ii) ~~according to claim 1,~~ a melt or solution of the polymerisation activator is added to the bone regeneration material, ~~the melt or~~ the solution is allowed to infiltrate the bone regeneration material, and afterwards the bone regeneration material is dried.

21. (Previously presented) Method according to claim 1, wherein a solution of the polymerisation activator is mixed with the bone regeneration material in an amount of from 0.1 to 20 % by weight (solid activator based on bone regeneration material).

22. (Previously presented) Method according to claim 1, wherein one or more polymerisation activators are used which are selected from the group comprising N,N-bis(2-hydroxyethyl)-p-toluidine, N,N-dimethyl-p-toluidine, N,N-dimethyl-N,N-aniline, ascorbic acid and barbituric acid.

23. (Previously presented) Method according to claim 1, wherein the polymerisation initiator is used in the form of a solution and/or the polymerisation activator is used in the form of a solution and the solution(s) is/are allowed to be drawn up by the bone regeneration material completely or as far as possible and the excess not drawn up is removed before step (iii).

24. (Currently amended) Method according to claim 1, wherein ~~there is used, as~~ inorganic bone regeneration material~~, an alkaline earth metal phosphate and/or an alkali metal/alkaline earth metal phosphate, especially an alkaline earth metal orthophosphate and/or alkali metal/alkaline earth metal orthophosphate, preferably a bone regeneration material which~~ is

selected from the group ~~comprising~~ consisting of alpha-tricalcium phosphate, beta-tricalcium phosphate, ~~calcium-deficient carbonate-containing hydroxyapatite,~~ octacalcium phosphate, ~~magnesium phosphate,~~ calcium hydrogen phosphate, calcium~~/sodium~~ orthophosphate and calcium pyrophosphate.

25. (Previously presented) Method according to claim 1, wherein the same bone regeneration material is used for the immobilisation of the polymerisation initiator as for the immobilisation of the polymerisation activator.

26. (Currently amended) Method according to claim [[25]] 1, wherein the bone regeneration material for the immobilisation of the initiator and the bone regeneration material for the immobilisation of the activator differ from one another in their chemical and/or mineralogical nature.

27. (Currently amended) Method according to claim 1, wherein ~~an interconnectingly porous bone regeneration material, especially~~ calcium phosphate[[,]] having the following characteristic data is used[[:]] as the interconnectingly porous bone regeneration material:

- pore diameters ~~from 0.1 to 500 µm, preferably~~ from 0.1 to 100 µm ~~and especially from 0.1 to 10 µm~~, and/or
- particle sizes (d_{50} values) of from ~~1 to 500 µm, preferably from~~ 5 to 300 µm~~, and/or~~
~~- BET surface area of at least 0.1 m^2/g~~.

28. (Currently amended) Method according to claim 1, wherein there is used ~~an interconnectingly porous bone regeneration material, especially~~ calcium phosphate[[,]] having a pore volume, accessible to the polymerisation initiator and/or the polymerisation

activator, of ~~0.4 cm^3/g or more, and especially~~ from 0.4 to 3.3 cm^3/g, as the interconnectingly porous bone regeneration material, while retaining the integrity of the particles of the bone regeneration material.

29. (Currently amended) Method according to claim 1, wherein the calcium phosphate bone regeneration material~~, especially calcium phosphate,~~ is used in crystalline, partly crystalline, glassy or amorphous form.

Claim 30 (Cancelled)

31. (Currently amended) Method according to claim 1, wherein there is used, as the monomer or as monomers of the monomer mixture, a multi-functional oligomer having terminal methacrylate groups~~, especially an oligomer of lactic acid and/or glycolic acid and/or delta-hydroxyvaleric acid and/or epsilon-hydroxycaproic acid and/or trimethylene carbonate~~.

Claims 32-39 (Cancelled)

40. (New) Method according to claim 5, wherein the oligomeric or polymeric derivatives of alpha-hydroxycarboxylic acids are lactic and/or glycolic acid.

41. (New) Method according to claim 10, wherein methacrylic acid 2-hydroxyethyl ester is used as adhesion-imparting agent.

42. (New) Method according to claim 1, wherein an organic peroxide selected from the group consisting of dibenzoyl peroxide, lauroyl peroxide and acetone is used as polymerisation initiator.

43. (New) Method according to claim 1, wherein the monomer or monomers of the monomer mixture are selected from the group consisting of an oligomer of lactic acid, glycolic acid, delta-hydroxyvaleric acid, epsilon-hydroxycaproic acid, trimethylene carbonate and mixtures thereof.